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THE BLUE GRASS REGION OF KENTUCKY

D. H. DAVIS
University of Minnesota

In the roughly circular area of rolling upland of north central Kentucky, the soils are especially well adapted to the growth of blue grass, as they have been formed for the most part by the disintegration of limestones of high phosphorus content, hence the name by which the region is commonly known. This area was the earliest settled portion of Kentucky and one of the first regions west of the Appalachians to be brought into agricultural use. For many years it has dominated the state both economically and politically, and despite declining relative importance, is today as in the past, the "Heart of Kentucky."

TOPOGRAPHY

The Blue Grass is a rolling upland of somewhat varied topography, with a maximum elevation of about 1,050 feet, altho the greater portion of the area is only 800 to 900 feet above sea level. The major topographic features constitute an inheritance from past geological time, but minor topographic variations within the region are largely the result of differences in the resistance of the various rock formations which have been exposed by the lowering of the broad uplift known as the Cincinnati Anticline. Erosion has nearly completed the process of truncation so that the oldest strata are now exposed at or near the former summit of the dome in Jessamine County. From this central point of maximum elevation toward the margin of the Blue Grass, therefore, successively younger formations are exposed, concentric belts of similar rock formations being encountered as one travels outward from the central portion in Jessamine County. The Blue Grass is limited to the outcrops at or near the summit of the dome.

These strata represent the oldest rock layers exposed in the state of Kentucky.

The entire Blue Grass area is underlain by Ordivician strata, but these vary greatly in character so that there is a concentric, belted arrangement of rocks and overlying soils from the oldest formations of the Jessamine Dome outward. These subordinate areas within the Blue Grass, named from within outward are: (1) the Lexington Cynthiana Limestone Area, (2) the Eden Shale Belt, (3) the Maysville-Richmond Limestone Belt. Within each of these areas, rock formations are of sufficient similarity so that topographic conditions are essentially uniform.

In the innermost of these areas, underlain by Lexington and Cynthiana limestones, the topography is gently rolling in character except along the larger rivers, where dissection has produced a hilly country. Drainage is largely underground, particularly in the Lexington limestone area, and the country is pitted with small sinks. The big springs, which are formed where underground streams appear at the surface, determined the location of many pioneer settlements which later became county seats, this being the case for Harrodsburg, Georgetown, and Lexington.

The Eden Shale Belt, which encircles the Lexington-Cynthiana Limestone Area, is very different in topography from the preceding region. Erosion has converted the area into a very rough country, much resembling in appearance the mountains of Eastern Kentucky, except that the hills, tho equally steep, are somewhat lower. Shale predominates, tho thin layers of limestone and occasional capping layers of sandstone occur. The hills often terminate in sharp ridges, but where the capping layer is sandstone, the summits are more rounded. Valleys are generally V-shaped, so that relatively little level land occurs where these formations appear and form the surface.

Surrounding the Eden Shale Belt and forming the outer margin of the Blue Grass proper, is a more level country underlain by limestones of fairly high phosphorus content. These are the limestones of the Maysville and Richmond formations. This country is very similar in appearance to that underlain by the Lexington and Cynthiana limestones, tho somewhat less pitted by sinks. Topographically this area differs markedly both from the Eden Shale Belt which it encircles and from the Knobs Area, a region of conical hills, which bounds it on the outer margin.

GEOGRAPHIC SUB-REGIONS

The economic development of the different portions of the Blue Grass is very similar on account of the considerable uniformity of the physical equipment, the homogeneity of the racial stock, and the similarity of the historical background. Variations in soil and topography resulting from the belted arrangement of the underlying rocks are sufficiently great, however, to result in considerable differences in the degrees and minor variations in the character of the economic development within the Blue Grass.

In the Inner Blue Grass, which embraces an area of 2,400 square miles, the chocolate-colored and reddish soils resulting

FIG. 1. A characteristic rural scene in eastern Montgomery County. In the areas underlain by phosphatic limestones, as in the Inner and Outer Blue Grass, pastures and fields frequently contain many trees and the sink holes, which are of common occurrence, afford watering places for the stock.

from the decomposition of the underlying Lexington and Cynthiana limestones are normally of sufficient depth for successful agriculture and of extraordinary fertility on account of the high phosphorus content of the limestones from which they are derived. In addition, the gently rolling character of the topography insures relative freedom from soil erosion except along the margins of the larger streams where the land is hilly in character. This portion of the Blue Grass is the best agricultural area in the

state and probably the most attractive in the United States in many respects. Few of the farms are small and many are several hundred acres in extent. In such cases, the owner's home is often rather pretentious and set well back from the public highway in a well shaded yard which may be several acres in extent. Tenant houses and the houses on the smaller farms in this area vary greatly in character, but they are in general substantial, attractive structures. Practically all the land is improved; the shaded roads wind thru a gently rolling country, past fine homes, and pastures, and fields often almost grove-like in character, furnishing a rural setting of extraordinary attractiveness.

FIG. 2. A typical farm house in the better portions of the Blue Grass. In both the Inner and Outer Blue Grass, the houses are often rather pretentious and set well back from the highway in well shaded yards which are often several acres in extent.

The Eden Shale Belt, which surrounds the Inner Blue Grass, has an area of about 2,500 square miles. On the north, where the dip of the strata on the flanks of the dome is gentle, a maximum width of 30 miles is reached; on the south, where the strata dip steeply, the belt is less than a mile in width in many places. On the eastern and western margins, the width varies from five to ten miles.

Soils are yellowish clays and are often thin, especially on the slopes. Derived as they are from siliceous shales, they are com-

monly of low fertility and under cultivation erode badly on the steep slopes characteristic of this region. Consequently much of the land has passed out of agricultural use and has grown up in briers, sassafras, and persimmon bushes. This portion of the Blue Grass, under an unwise cropping system, is deteriorating rapidly. The steep hillsides, grown up in bushes and littered with flat slabs of sandy shales, the poor roads, and the generally poor living conditions, make this an area of great contrast to the Inner Blue Grass.

Encircling the Eden Shale Belt is the area underlain by Maysville and Richmond limestones, the Outer Blue Grass, with an

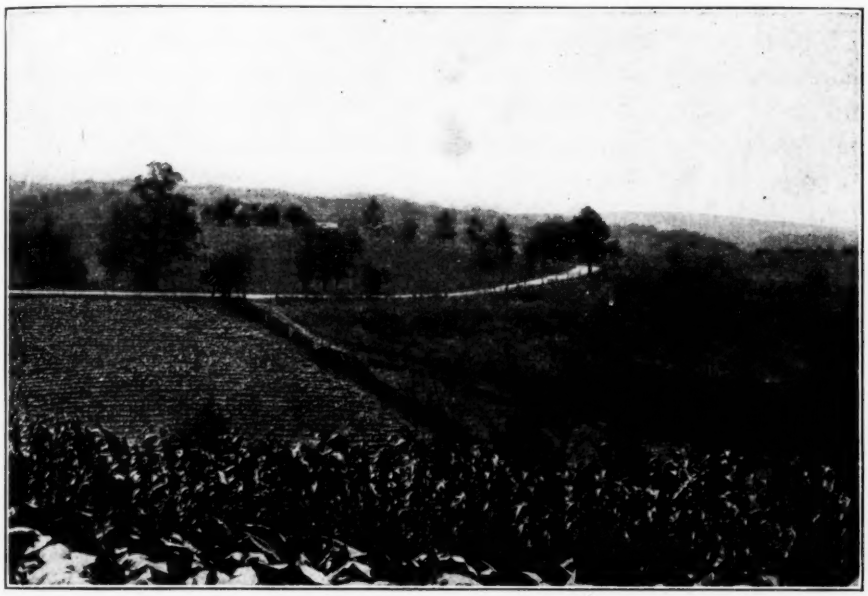

FIG. 3. A ridge road in the Eden Shale Belt near Falmouth, Pendleton County. In this portion of the Blue Grass, slopes are steep and ridges are often sharp. The roads wind along the crests of the ridges in order to avoid heavy grades.

area of approximately 3,200 square miles. This is the largest as well as the most attenuated of the three subdivisions of the Blue Grass. As in the case of the Eden Shale Belt, and for the same reason, the maximum width is to the north and west. The soils are similar in character tho somewhat less desirable than those of the Inner Blue Grass which the area resembles topographically. The Outer Blue Grass is handicapped less by soils, however, than by the location and shape of the area. In the case of the Inner

Blue Grass, the area of good soils is compact; in the Outer Blue Grass, the good soils form a narrow belt, often only a few miles wide, lying between the poor Eden Shale Belt and the even less desirable Knobs Area which forms the outer boundary of the Blue Grass. The lesser attractiveness of the Outer Blue Grass, by comparison with the Inner Blue Grass, is shown by the prevalence of smaller farms, poorer roads, and the absence of fine homes. The best conditions within this area occur on the margins where the belt reaches its maximum width.

THE LAND AND ITS UTILIZATION

Unimproved land in the Blue Grass comprises approximately 23.5 per cent of the total area as against a state average of 44 per cent. In no county does the percentage reach the state average and only in the Eden Shale Belt does it rise to 40 per cent. The maximum percentage of unimproved land is found in the regions marginal to the larger streams, this being particularly marked along the Ohio and Licking Rivers, especially where the area is underlain by the shales of the Eden formation. In the Inner Blue Grass, as in Fayette County, over 90 per cent of the land surface is improved. The small percentage of unimproved land, together with the fact that practically all of the unimproved land is in farms, attests the great agricultural desirability of the Blue Grass.

In the Eden Shale Belt, however, the percentage of unimproved land is increasing, as fields on the steeper slopes pass out of agricultural use under unwise use in crop production. In Owen County alone, the increase in the acreage of unimproved land between 1910 and 1920 amounted to over 9 per cent of the total area of the county and this is typical for all portions of the Eden Shale Belt.

The number of farms in the Blue Grass as a whole is increasing as a result of the tendency toward subdivision of the larger estates in the better portions of the area. For the Eden Shale Belt, however, this is not true, many portions of that area having suffered a decrease in the number, and an increase in the size of the farms during the past decade as a result of the decrease in the agricultural desirability of the region. In the Eden Shale Belt, the number of farms has already passed the maximum; for the Inner and Outer Blue Grass, the maximum has not as yet been reached, as in these areas with favorable soil and topographic

conditions, small farms are an economic possibility with tobacco as a major crop, therefore subdivision will continue as the larger estates are split up. Farms of 50 to 60 acres are ample in size to support a family in comfort with present agricultural practice. A continuance of present trends indicates a considerable reduction in the size of the farms in both the Inner and Outer Blue Grass. The only factor which may hold this subdivision in check is the fact, that for the establishment of agricultural estates of considerable areal extent, few if any other sections of the United States present so attractive a setting, this being particularly true of the Inner Blue Grass.

Land prices in the Blue Grass have advanced rapidly as in many other good agricultural areas in the United States. This rapid increase was largely the result of the high price of white burley tobacco, the chief cash crop of the area. At the peak of high prices in 1919, cash rentals justified prices which in a few cases exceeded $800.00 per acre. With the collapse of the agricultural boom, land prices declined rapidly and many purchasers of land became financially embarassed. Several years will probably elapse before it is possible to evaluate fully the results of the land boom.

In the Blue Grass, much of the land is worked by tenants, particularly in the better areas. Many of these tenants are "croppers," agricultural laborers, who receive as their pay a portion of the tobacco crop. The cropper is not necessarily resident on the land which he works. The great increase in the area given over to the growing of tobacco has resulted in a rapid increase in tenancy. The rate of increase in tenancy has been greatest in the Inner Blue Grass, somewhat less rapid in the Outer Blue Grass, whereas little change has occurred in the Eden Shale Belt where soils are poor and farms are small.

In marked contrast to conditions in many other portions of Kentucky, the permanancy of agriculture, and the continued productivity of the land, are salient characteristics of the Blue Grass. Only in the Eden Shale Belt has the use of the land varied over relatively short periods of time. In both the Inner and Outer Blue Grass, except in very limited areas of thin soils or steep slopes, the land has been used in crop production for many decades; cereals, and tobacco alternating with pasture without apparent depletion of soil fertility, or without the development of

excessive slope wash. In the Eden Shale Belt, however, conditions are similar to those which exist in many other hilly portions of the state. Temporary agricultural use of the slopes is followed by reversion to forest as erosion removes the thin soil cover and makes the area unsuitable for the production of crops.

CROP PRODUCTION

By contrast with many other portions of Kentucky, the Blue Grass is a commercial producer of agricultural commodities, particularly tobacco and animal products, the latter industry being based upon excellent pasturage and a surplus production of corn

FIG. 4. Cutting tobacco in the Inner Blue Grass near Lexington. The tobacco is cut late in August, and hung on stakes to wilt before being hauled to the barn, where it is cured and prepared for market.

on farms which contain a larger acreage of cultivable and improved land than in those areas in which self sufficiency is the major objective in the rural economy. Contributing to the position which the Blue Grass occupies as a commercial producer are the location of the area, its ease of accessibility by rail lines from important consuming centers, and the excellent internal communication enjoyed on account of the many miles of fine limestone pikes and paved highways. These conditions are in turn related to, and in part the result of, favorable topographic conditions.

Corn is the most important cereal crop, comprising upwards of 75 per cent of the total cereal production expressed in bushels. The crop is produced under varied soil and topographic conditions and in general justifies itself as a crop on the basis of yields, tho as elsewhere in Kentucky, inherited traditions of agriculture are in part responsible for the important position which it holds in the cropping system. This is especially noticeable in the more hilly portions of the Eden Shale Belt where the preservation of pioneer conditions is most marked. In these hilly counties, the fact that corn yields well under indifferent cultivation, together with the general utility of the grain and its ease of storage, have had a very definite effect in determining the position of corn in the agricultural economy.

None of the small grains occupies an important position in the cropping system. The small grains are grown either as a part of a crop rotation or to enable the farmer to distribute his work advantageously, not because of the direct financial return from their cultivation.

One of the outstanding characteristics of the Blue Grass which sets the area apart from other sections of Kentucky is the fact that fields out of use in the production of cultivated crops are seeded over with grass following the cropping of the land. In many portions of the state, the absence of pasture grasses suited to the soils results in the capture of fields, not in use in crop production, by sprouts and weeds which causes the farms to present a neglected, unattractive appearance quite in contrast to the pastures of the Blue Grass with their flocks of sheep or herds of cattle. In addition to the large acreage in pastures, hay crops constitute an important fraction of the farm yields, particularly in the Inner and Outer Blue Grass.

The major cash crop is white burley tobacco. The soil types on which the tobacco is grown in the Blue Grass vary greatly in character and there is also a great difference in the topographic conditions in the three sub-regions, in all of which tobacco is the major cash crop. In the Inner Blue Grass, where maximum yields are obtained, the soils are silt loams and the surface is level or undulating; the same conditions as to soils also exist in the Outer Blue Grass, but in the Eden Shale Belt, the soils are heavy yellow clays and the slopes on which the crop is grown are often steep.

The growing and marketing of tobacco requires a great deal of labor, distributed thruout the year. In view of the large labor requirement of the crop, the acreage cultivated by a given man and his family is limited. Tho most of the farms which grow tobacco are operated by the owners, the greater part of the tobacco is raised by share croppers who rent from five to twenty acres, the size of the tract being determined by the working force of the cropper's family or the amount of outside labor he expects to hire. The large labor requirement of tobacco and its position in the cropping system of the Blue Grass have profoundly affected both

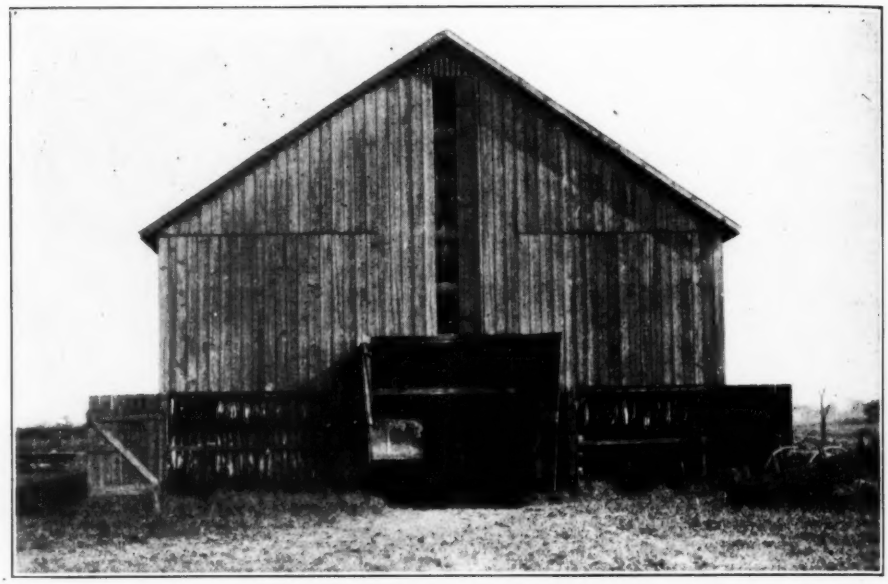

FIG. 5. A tobacco barn near Lexington, filled with drying tobacco. After being hauled to the barn, the tobacco is hung on racks to cure, the interior of the barn being completely filled from ridge to floor except for a driveway thru the barn. The barns are equipped with doors to regulate the amount of air admitted in order to insure the proper curing of the crop.

cropping practice and the character of the tenant system as well as the amount of land worked by a given family.

ANIMAL INDUSTRIES

The livestock industry is of great importance in the Blue Grass, tho of somewhat lesser significance and different character than is popularly supposed. In the vicinity of Lexington, which is located in the heart of the Inner Blue Grass, there are many cele-

brated stock farms. These farms, with their grove-like pastures, well kept fences, fine barns, and beautiful houses, are typical of the Inner Blue Grass only, altho much stock is raised in the other sub-regions and a few estates devoted to the raising of blooded stock are located in the Outer Blue Grass.

The Blue Grass, and particularly the Inner Blue Grass, is admirably adapted to the raising of fine stock. The rolling, well drained country with numerous springs, sink holes, and creeks, the almost ideal climate, and the fine blue grass pastures furnish a favorable combination which could be improved upon only with

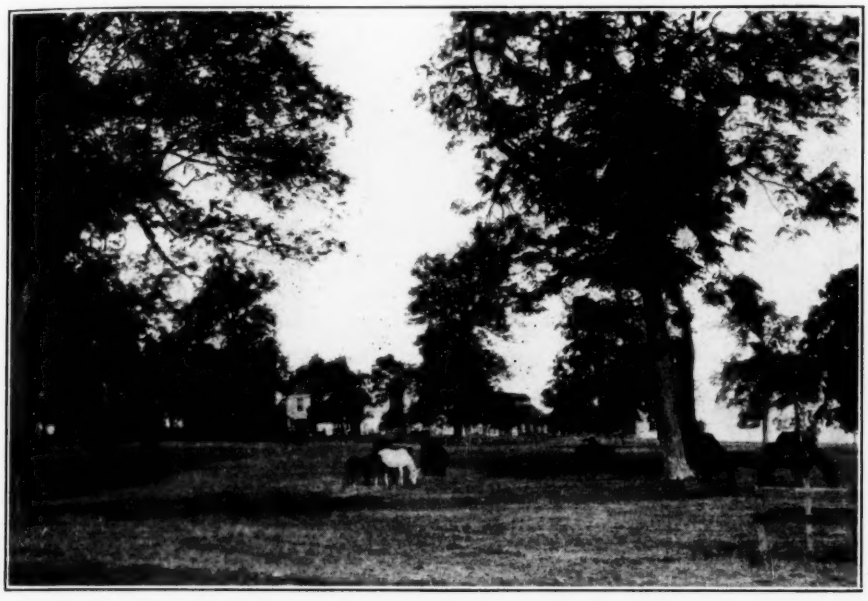

FIG. 6. The Holyrood stock farm near Lexington, Fayette County, in the Inner Blue Grass. The grove-like character of the pasture makes a very attractive rural setting. Many of the larger estates such as this are given over to the raising of the blooded stock for which the Blue Grass is famous.

difficulty. The physical setting of the area, and the character of the racial stock, make the breeding of fine horses one of the logical activities of the area.

The feeding and finishing of beef cattle is of much more importance than the dairy industry except in the vicinity of the larger urban centers. In the Eden Shale Belt, both types of cattle production are much less important than in the other portions of the Blue Grass.

Sheep are fed in both the best and the poorest portions of the Blue Grass. In the Eden Shale Belt, their presence denotes effective use of low grade land; in the Inner Blue Grass, sheep are temporarily more profitable than beef cattle in the opinion of many farmers, hence it is a common sight to see flocks of sheep grazing on the highest priced land in the state.

Swine do not constitute as large a fraction of the total number of the livestock as they do for the state as a whole, tho the number per square mile is above the average for the state. By comparison with important swine producing areas as Iowa, the number of swine per square mile of land surface in the Blue Grass is small.

Farm Improvements

In the Inner and Outer Blue Grass, the numerous barns and outbuildings typical of northern farms are not characteristic, as climatic conditions render them unnecessary. Farms on which the major emphasis is placed on the breeding of fine stock have more extensive barns than do those in which stock raising and finishing is only one of the farm activities. In all portions of the Blue Grass, however, the tobacco barn is a characteristic outbuilding.

Fields in both the Inner and the Outer Blue Grass are usually well fenced. In the Inner Blue Grass, fences are frequently constructed of limestone slabs and add greatly to the attractiveness of the roadside. In other cases, they are of various types of rail construction. Woven wire fencing is replacing other types in the Blue Grass as elsewhere in the country. In the Eden Shale Belt, outbuildings are few in number, even by Kentucky standards, and in most cases, they are poor. In this area, tho stone is abundant, it is not used in the construction of fences and the fences of other types are generally in a state of disrepair.

Court Day and the County Seats

Thruout the Blue Grass, county court day still preserves at least a portion of the importance which it possessed at an earlier date. In the hillier areas, where roads are commonly poor and isolation is greatest, the open square around the court house is the place of political discussion, the center of the social life of the community, and the market place for business transactions on the days when court convenes.

The smaller communities, many of which are very old, have been altered from pre-war conditions in but slight degree. Few of the streets are paved, and in some cases, "stepping stones," or narrow slabs of limestone set on edge, suffice to allow the pedestrian to cross the muddy street. In many of these small towns, court day is still the only time in the month when activity prevails on the streets.

ROADS

Unsurfaced roads in the Blue Grass are almost impassable after rains, hence surfacing of some kind is common. In the Inner

FIG. 7. A limestone pike in Clark County, east of Winchester. In the Inner Blue Grass particularly, the roads are excellent, shaded by fine trees, and bordered by stone fences made of flat limestone slabs.

Blue Grass, and to a lesser extent in the Outer Blue Grass as well, practically all the public highways are good, hard surfaced roads, either limestone pikes or paved highways. The main streams are commonly bridged in the better portions of the Blue Grass, tho most of the crossings of the Kentucky River are by ferry.

In the Eden Shale Belt, roads are poor except for a few trunk highways. On account of the hilly topography, roads follow either ridges or valleys in this area; in either case, the winding character

of the road greatly increases the distance which must be traveled. Bridges over the smaller creeks are commonly lacking, and in some cases, it is necessary to ford streams of considerable size. In many cases, the roads, so-called, resemble those of the mountains of Eastern Kentucky.

FIG. 8. A road up Taylor's Fork in the Eden Shale Belt of Madison County. In this area, the roads follow either ridges or creeks on account of the hilly topography. Up the small streams, the road is often in the creek bed.

CITIES

Lexington is the largest city in the Blue Grass, if the Ohio River cities are disregarded. As early as 1810, the population was 4,326, since which time growth to the present population of nearly 42,000 has been steady tho slow. This growth has not resulted from industrial development, but has been the accompaniment of a steady increase in the population of the entire area, and the extension of the trade territory of Lexington by improved methods of transportation. The extremely small amount of industry is emphasized by the fact that the most important manufacturing establishment, the Lexington Rolling Mills, employs only about seventy-five men.

Other urban centers of importance, most of which are charming residence cities, embrace Frankfort, the State Capital, Winchester, Maysville, Paris, Danville, Richmond, Harrodsburg, Georgetown, Cynthiana, Nicholasville, Mount Sterling, and numerous other smaller county seats, many of them places of considerable historic interest, in addition to Newport and Covington and their suburbs, across from Cincinnati.

POPULATION

Population density reached 140.4 to the square mile in 1920, with a density of rural population of 110.1 to the square mile.

FIG. 9. Sled and a country store in the Eden Shale Belt of northern Grant County. The sled is in common use in the Eden Shale Belt, even in summer, as roads are very poor in this area.

This high density of rural population reflects the great agricultural desirability of the area. It has been made possible thru soil, climatic and topographic conditions favorable for the growth of tobacco, which requires much labor and yields high returns per acre of land under cultivation.

The present white population of the Blue Grass consists essentially of the descendants of those settlers who occupied the area

prior to 1850. In 1920, more than 99 per cent of the white population was native born, and of the foreign born, 50 per cent lived in the Newport-Covington area, on the Ohio River. The absence of any considerable infusion of new blood has produced a white population of great homogeneity.

Negroes have always constituted an appreciable fraction of the population in the Inner and Outer Blue Grass but have always been few in numbers in the Eden Shale Belt. Of late, the Negro population has been decreasing except in the counties with large urban centers.

FIG. 10. Log house in a hilly section of Bath County. In portions of the Blue Grass underlain by sandstones and shales, slopes are steep and soils are thin. In such areas, living conditions are very poor and log houses are not uncommon.

The outstanding character of the Blue Grass is that it is essentially rural. The traditions of the area are agricultural; major changes can be expected only as a result of an infusion of new blood or the establishment of contacts with other areas which will result in the development of new view points. At present, neither of these is occurring with sufficient rapidity to modify the area materially, hence the Blue Grass may be expected to retain its present peculiar appeal.

THE SELECTION OF GEOGRAPHICAL MATERIAL FOR JUNIOR HIGH SCHOOL*

E. E. LACKEY

THE PROBLEM

It is the purose of this paper to inquire into the correlations that may be found between the aims of junior high school education and the aims of junior high school geography. Having found such a correlation we shall try to point out some geographical materials designed to develop in junior high school children abiding interests and altruistic attitudes with reference to the peoples of all parts of the world. Geography is able uniquely to develop such interests and attitudes because it is the only subject offered to junior high boys and girls, whose special province it is to inquire into the physical environment of people everywhere, to discover, if possible, what problems they must solve in order to secure the necessities and luxuries of life.

THE NATURE OF JUNIOR HIGH SCHOOL BOYS AND GIRLS

It is well known, of course, that the junior high division of our school system corresponds to the early adolescent period. To arrive at any satisfactory conclusion as to the selection of geographic materials for such a school we should know something of the nature of the individual for whom the material is intended.

One of the recent writers of junior high school education discusses adolescent characteristics under four heads, namely—physical, intellectual, emotional and volitional. This analysis has much for junior high school writers and teachers to think about. On the intellectual, emotional and volitional side are factors that should be of special interest to geographers.

"Among many other things that accompany and characterize the intellectual changes and interests, the adolescent has developing within him an altruistic and idealistic interest in others and in life which is rare in earlier or later years. There is a keen interest in linguistics and a fondness for new relationships with persons, things, and forces. And mingled with all these idealistic elements

*Presented at the Madison meeting of the National Council of Geography Teachers, December 29, 1925.

that reveal themselves, there is a strong attachment for the practical and realistic factors that operate in human affairs."[1]

On the emotional side the adolescent is characteried "by bursts of generosity amounting almost to self sacrifice; by an eager desire to reform every and all situations and persons that fail to measure up to the standard set by his critical though immature judgment; and by a display of sympathy for the weak and unfortunate."[1]

"So it is that on the social or volitional side, adolescents seek to attain their satisfactions, and ends through associations with fellow beings; through the exchange of human sympathies;—and through journeys and trips of exploration and adventure into realms of knowledge and activity hitherto unfamiliar. And yet through every undertaking and scheme projected by the adolescent, runs the idea of good form and to adherence to the rules of the games as established by the group recognized as possessing the authority."[1]

"In connection with the volitional phase of the adolescent another author says that "compared with the relatively self centered life of the *elementary school* child, the life of the *junior high school* adolescent is shot through with consciousness of self as related to other persons. His outlook is hetero-centric, not ego-centric. His behavior has constantly a social reference. He considers himself in relation to others."[2]

These quotations and others that could be given emphasize several adolescent characteristics in which the geographer is vitally concerned. Evidently adolescent boys and girls differ in many respects from younger children. Their altruistic and idealistic interests; their fondness for new relationship; their growing generosity; their advocacy of the square deal, their sympathy for those in distress, their desire to see the game of life played according to the rules of recognized authority; and withall their "strong attachment to the practical and realistic factors that operate in human affairs," mark this momentous period as the most fertile time in the child's life for the implanting of those altruistic attitudes which mean so much toward the substituting of the rule of truth and law in the world in place of reign "tooth and claw."

[1] Davis, Junior High School Education, pp. 33-35

[2] Whipple in Monroe's, Principles of Secondary Education, pp. 272-273

THE AIMS OF THE JUNIOR HIGH SCHOOL

The enrichment of our school curricula thru the junior high school organization is very significant. Two well known educators in stating the aims of this division of our school system say that, "out of the uncertainties which surround the development of our school curricula we may expect fairly universal assent to three general statements. First, the future must see greater emphasis than has the past on studies of community life and community needs. And the term 'Community' must not be narrowly defined. The course of study must be enriched to include intensive study of our nation and its meaning to our citizenship and to the world. Secondly, the future must see the enriched course providing a broad, sure foundation for the practical life of the individual. Thirdly, the enrichment of the course must aim consciously at the destruction of those provincialisms and class prejudices which have worked in the history of nations in the past, counter to the interests of democracy. Ignorance of other tasks and problems than one's own breeds lack of sympathy and results in the separation of group from group. Intelligence regarding others brings with it sympathy and cooperation."[3]

Another prominent educator writing on the purposes of the junior high school says among other things that, "it is to offer programs of studies which shall be suited to the varying needs of boys and girls in their early adolescence; to assist them to develop right attitudes toward life and its problems; to take into account their budding idealism and their emerging religious concepts; to acquaint them in an elementary way with the social, the economic and the political problems which they must soon face in the world outside of school; and to inculcate in them both by theory and practice the principles of good citizenship."[4]

It is evident as one studies recent thought relative to the nature of the adolescent child and the aims of the junior high school that theoretically there is a high degree of correlation between the two. Eventually there will evolve a curriculum of studies suited to the newly recognized situation. The inclusion of general science, general mathematics and general social science in many junior high school courses, represents an attempt to meet a recognized need.

[3] Bagley and Judd. *School Review*, May, 1918, pp. 303 and seq.
[4] J. W. Gosling, *Educational Review*, Vol. 57, p. 377

It seems that those interested in geography are aware of the unrest and see it in a menace to the standing of their subject in the junior high school curriculum. It is not at all strange that the makers of curricula should subordinate geography in their plans for the new school. The modern conceptions of the subject are so recent that few realize what it means for education in a democracy. What shall the exponents of geography do about it?

THE PURPOSES OF GEOGRAPHY THAT CORRELATE WITH THE PURPOSES OF THE JUNIOR HIGH SCHOOL

It is not necessary to recapitulate all the aims of geography but to call attention only to those that seem the more closely related to our problem.

The representatives of geography on the Joint Commission on the Presentation of the Social Studies did their work well when they were able to save for geography such a valuable and distinctive field in which to work. In their report they gave us a good definition of the subject and a statement of its larger purposes. The one paragraph of the report that correlates perfectly with the aims of the junior high school is the following: "The realization that differences in people result in part from differences in natural environment helps to promote a sympathetic understanding of peoples in that it affords a key to the explanation of characteristics and attitudes likely otherwise to be misunderstood."[5]

It so happens, then, that geography contains some of the richest materials which the best thinkers believe should be taught to junior high school pupils. These materials are offered at the time in the individual's life when he has an altruistic outlook; when his life as yet, is not poisoned by prejudice; when he is most susceptible to the humanitarian appeal; when he is an apostle of the square deal; and when abiding interests and attitudes are being developed most rapidly. At this crucial and strategic period geography offers a rich assortment of material designed especially to promote a sympathetic attitude and understanding of peoples in specific natural environments as they go about their daily quest for the necessities and luxuries of life.

The demands of boys and girls in the junior high school on the geographer are therefore very specific and insistent. They want to

[5] Report of the Joint Commission on the Presentation of the Social Studies in the Schools, *Jour of Geog.*, Vol. XXII, p. 79

know what the problems of other people are. They are depending upon the geographer for an outline of these problems. They insist that he assume this responsibility, for if he fails them, it is not likely that they will ever come in contact in any systematic way with this rich field of vital human experiences.

THE TEXTBOOK IN JUNIOR HIGH SCHOOL GEOGRAPHY

Geography stands to lose out in the junior high school if geographers and textbook writers do not recognize the fundamental bases of the junior high school organization. The two cycle series of textbooks today are a misfit because the first half of the second book is designed for the sixth grade of the elementary school, and the second half for the seventh grade or first year of the junior high school. The one cycle series are no better because here again the series is split between the elementary and junior high schools. If geography is to hold its place in the junior high school, a two cycle series must be maintained, but the first cycle must close with the sixth year of the elementary school, and a new book must be designed for the junior high school in which all the known aims of the school are recognized and the materials of geography selected accordingly.

THE MATERIALS OF JUNIOR HIGH SCHOOL GEOGRAPHY

Out of the large assortment of geographic materials what shall we select to feature in the junior high school? If our inquiry has in any measure pointed the way, we conclude that we must interest ourselves in the problem of the people in specific natural environments. This we must do, if we hope to develop those interests and attitudes which promote a broad sympathy for other people and an understanding of their problems.

Thus, we arrive at the conclusion of the whole matter, namely, we cannot abandon the political unit as an area of study. We do not mean by this that no cognizance can be taken of climatic, physiographic, economic and other types of areas, for all these must be taken into account as a part of the natural environment in which the people are working and making a living. But as a matter of fact, outside of our own country we think of peoples in terms of nationalities and not in terms of the natural units of area on which they happen to live. For purposes of study in the junior

high school geography, then, we must cling to the study of national or political entities or we will defeat, as far as geography is concerned, the purpose for which the junior high school is organized. To be more specific, we must emphasize a study of the problems of the people of the Netherlands, France, Denmark, Poland, Germany and Russia rather than devoting our time to commodity or industrial studies of the "Lowland Plains of Europe" or to a generalized view of the problems of the peoples of these plains. Likewise, for junior high school purpose, we must emphasize the problems of the people in the political units of South America rather than a study of South America divided into geographic or other types of regions.

Let us indicate further what we mean when we advocate featuring the *problems of the peoples in other lands* in junior high school geography. To satisfy the demand upon geography from the junior high school, we should acquaint the boys and girls with the worthy achievements of the people of each country studied, especially those achievements that are closely related to environmental influences. But this alone is not sufficient. Not only should geography show how problems of the past were solved, and how the problems of the present are being met, but if a full measure of benefit is to be derived, the unsolved problems of today should be presented, and some of the possible problems of the future anticipated. Such a survey of the activities of the Dutch, the Italians, the Japanese, the Mexicans and the other nationalities of the world with whom we are associated, ought to yield large returns in terms of junior high school ideals and aspirations.

Of course, not all of the problems raised should be solved. With reference to many of them, only the geographic setting could be given, leaving the solution to the future. In fact, the most worthwhile results in terms of junior high school ideals would be realized when our boys and girls in post-school days could view with interest and sympathy the activities of the Dutch, the Danish, or the Mexican people in working out their problems —problems which were raised in the class in junior high school geography.

Let us illustrate more specifically. The Italian people face a number of difficult problems, several of which have arisen because of the rapid increase in population. The population has

doubled in the last hundred years. The most pressing problem is how to find profitable employment for all the people. There are a number of possible ways, each of which is a problem in itself.

The Italians are skillful workmen and by greater use of available water power, more manufacturing can be done. This would make more employment. The land of Italy has been farmed for hundreds of years and much of it has become unproductive. The forestation or the building up of worn out land is one of the growing needs. The relics and ruins of ancient times are a valuable asset which will bring more and more tourists to Italy if properly advertised. How to do this to the best advantage is a vital problem with the Italians. The planting of Italian communities in other countries would benefit Italy, because these communities would patronize Italian industries. Can this with safety be done? The glory of ancient days inspires many Italians with a desire to regain some of their former greatness. This creates a desire to regain some of the land formerly held. The problem is how to satisfy this desire for greatness without intruding on the rights of neighboring countries.

In the junior high school, the work on Australia should not deal with *our problems* relative to the Australian people, but rather with *their problems* of adjustment to *their* environmental situation. One of the large problems in the development of Australia is that of transportation. Most of the trade of the continent is with the United Kingdom by way of the Suez Canal. The distance from London to Sydney by way of Suez Canal and by way of the Panama Canal is almost the same, that is, each is nearly half way around the world from London. Will the use of the Panama Canal become more important for this trade? The problem of salable surplus products is a vexing one. Heavy, bulky or perishable goods generally cannot pay for their transportation unless they are high in value. These things must always be considered in developing new industries in Australia. The development of tropical Australia probably awaits cheaper labor. But cheap labor is impossible unless the people modify their immigration laws so cheap labor from Asia may be admitted. These are only a few of the problems of the people of Australia that should interest a junior high school boy or girl.

In conclusion, let me say again that the unit area that should receive chief emphasis in the junior high school is the political

unit, because it is in such unit areas that we are best able to teach peoples as nationalities. And it is in such unit studies that the aims of the junior high school and the aims of geography can be, in the writer's judgment, most satisfactorily correlated.

REFLECTIONS ON THE TEACHING OF GEOGRAPHY

W. S. DAKIN
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I. CHANGING CONCEPTIONS OF PURPOSE OF GEOGRAPHY

The teaching of geography has passed thru many phases since it became a part of the public school curriculum some eighty years ago.

GEOGRAPHY A PRACTICAL SUBJECT

Always geography has been presented as a practical subject. History might have a cultural aim, science might develop the imagination, but geography was assumed to be mainly useful as a guide and encyclopedia for travelers and traders. With such a point of view the teaching of the subject was bound to have a limited range and to suffer frequent changes in content; these changes depending on what for the moment seemed most worthwhile to the student as a future man of affairs.

This point of view was for a long time expressed in emphasis on the study of location. The positions of all places of possible importance, past or future, were learned. The memorizing of long lists of names was accepted as learning geography. If one desired to visit or read about these places, the knowledge of their exact location was supposed to be essential. Such content was rather well named sailor geography.

THE INFLUENCE OF SCIENTIFIC THOUGHT

Later the influence of science was seen in the emphasis on physical and mathematical facts. It was expected that by learning about latitude, longitude, winds, ocean currents, soils, and rainfall the student would acquire ability to determine by careful reasoning probable climate, products, and social conditions of any given

region. Thus the world could be interpreted by scientific formulae, and, incidentally, pupils taught to think.

PRESENT DAY EMPHASIS

The present day emphasis on social values, the living conditions of people (the earth as the home of man), their occupations, and products has had a vital and healthful influence on geography teaching. Geography has retained some of the locational facts, but it utilizes the scientific point of view in its effort to detect and measure environmental influences.

Despite the widened range in subject matter and the refinements in method of instruction, geography teaching has lacked vision. One aim may well be to extend our commercial relations with other parts of the world, but geography, rightly taught, should result in better understandings between our own people, and those from other and remote parts of the world. In geography studies, then, there may be laid foundations for sympathy and appreciation that can have a distinctly cultural value for teacher and student alike.

Naturally these changes in emphasis affecting the subject matter have also suggested new methods of teaching. Drill was the essential method for imparting the very definite content of the early geography texts.

Physical and mathematical geography required demonstration and brought into the schools much concrete material, but frequently the text content was uninteresting and beyond the comprehension of children for whom it was intended.

The social interpretation of geography admits a mass of subject matter that is interesting but difficult to organize and evaluate. Everything which promotes realism seems acceptable.

If abiding interests are not secured in this way, at least there is aroused a sense of wonder and amazement at the varied and curious things to be found in the wide world. Stories of strange people, accounts of picturesque places and wonderful buildings make interesting reading. But unless intelligently discussed and organized, it merely passes as entertainment. Too often the very remoteness from his experience makes it difficult for the child to associate descriptive geography with reality. Unconsciously, he classes his "People of Other Lands" with the characters in his fairy tales and other imaginative literature. It is a well-known

fact that savages fail to register astonishment on hearing for the first time a phonograph, or seeing a picture of themselves. On the other hand, a bow and arrow of larger size or different design from their own will arouse the keenest interest. The latter is associated with their experience. The phonograph and the camera are so unusual that they at once class them as miraculous, supernatural, and in that realm, of course, anything may happen. Less emphasis, then, should be placed on the strange and grotesque, more on the variations from customs and occupations already familiar to children.

Evidently the basis for selecting geographic content must be broader than a mere appeal to present interest or possible future worth. Each day, week, and year new places are coming into prominence. Their location in no way can be foreseen. Who, a few years ago, would have considered Angora in a list of minimum essential locations, yet today it houses the government once exercised at Constantinople. Who can predict where the next great discovery of gold or oil may build up a city or bring a whole province into world politics?

HUMAN GEOGRAPHY OF BRITISH GUIANA

OLIVE GILLHAM
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STATEMENT OF THE BASIS FOR THE STUDY

An interesting and adequate description of Georgetown, the capital and chief port of British Guiana, furnishes a good basis for a geographical study of the Colony. Question after question arises in connection with what we, thru the author's eyes, see in this city. In the first place the architecture is distinctly Dutch in style. The tall houses with their slanting roofs, and gables facing the street look out of place in their tropical environment. In investigating this seeming incongruity we find not a geographic adjustment but an interesting bit of history involving some geographic factors. This portion of the northeast coast of South America, now known as British Guiana, was first explored by the English but was abandoned by them, colonized later by the Dutch, and afterwards transferred back to the English.

Adjustments Made by Early Dutch Colonists

Why was this district first colonized by the Dutch rather than the English? A survey of the coastal area leads to the conclusion that this was not due to mere chance nor altogether to political reasons; there is an evident geographic factor involved. The strip of land bordering on the ocean and extending backward in width from five to sixty miles, altho very fertile and productive, is low and marshy, much of it being below the level of the sea. To the early English explorers, unaccustomed to making adjustments to this particular kind of environmental conditions, the situation presented a very discouraging outlook—one in which the game would not be worth the candle. On the other hand, the problem of rescuing and utilizing this low-lying, sea-flooded area was not a new one to the Dutch—they were accustomed to contending with the sea for the possession of land and were perfectly at home in building dykes and draining the land thus rescued. Years of experience had given them the knowledge and skill needed in making just such land fit for agriculture. Hence the Dutch were willing to undertake the settlement and development of this region. The fact that one-tenth of the area under cultivation is often devoted to parapets, dams, and trenches shows how vital is the part played by the drainage system which has thus been developed.

In the city we see other adjustments that reflect certain climatic conditions. Many of the houses stand high on wooden piles as a precaution against floods, and canals are run in many of the streets to relieve the river, on whose banks Georgetown is built, in time of flood, for this area is one of heavy rainfall—often reaching one hundred inches on the coast and more in the interior. The large wooden or iron vats which we see connected with almost every dwelling house and in which rainwater is stored for drinking purposes also indicate another difficulty that is encountered in this low, poorly drained area, namely, that of securing water pure and suitable to drink.

Geographic Reasons for the Various Nationalities Represented in the Population

On the streets of Georgetown, our description tells us, we will meet people of various nationalities and races—white, including English, Germans, Dutch, Irish, Scotch and Portuguese; East Indians; Negroes; half castes; Chinese, and native Indians. In-

quiry reveals that of the whole population of the Colony, estimated at about 300,000, the Europeans, other than Portuguese compose only about 1.5 per cent. The other nationalities are distributed as follows: East Indians, 42.7 per cent; Negroes, 39 per cent; half castes, 10 per cent; Portuguese, 3.4 per cent; Chinese, .89 per cent. A study of the climate and environmental conditions shows the reason for this adjustment of races. The damp heat of the tropics is always unhealthful for members of the white race, especially those from temperate climates. While the coast of British Guiana is more healthful than some other tropical regions, the country as a whole is not at all adapted to settlement by white people, since in it they are incapable of prolonged manual labor. The number of the white population, consequently, is comparatively small. In the early development of the Colony before the abolition of slavery in England the white settler depended almost entirely upon the African slave for the cultivation of his plantation, and the population was then made up of whites, Negroes and native Indians. But plantation labor in the hot climate was always distasteful to the Negro, and after his emancipation he refused to work. To rescue the colony from ruin which threatened it, labor was introduced from Portugal, East India and China. The Portuguese, however, were not physically able to meet the arduous demands of tropical agriculture. They soon left the plantations and became shopkeepers and peddlars in the towns. This accounts for the fact that at the present time the owners of most of the provision and the rum shops in Georgetown are Portuguese. The East Indian had not the physical strength of the Negro but was more willing to work, was accustomed to the climatic conditions which are similar to those of his native land, and had endurance sufficient to meet the demands of his tasks. The East Indian coolies brought with them knowledge and experience in rice growing gained from long generations of practice, and to their experience and skill is due the first development of the rice industry, which has increased until at present rice acreage occupies about 30 per cent of the cultivated area. Thus races and nationalities have adjusted themselves to the environmental conditions of the Colony.

Responses of the People to the Natural Environment as Indicated by Commodities of Trade

The commodities of foreign trade at the wharves of Georgetown, as pictured in the description, would stimulate an investiga-

tion of the agricultural, mining and commercial activities of the Colony. A general survey of the country shows that it may be divided roughly into three belts: (1) a cultivated area known as the front lands, (2) savannas, and (3) forest lands which include the mountain regions.

The cultivated area comprising less than .5 per cent of the total area lies in the alluvial belt along the coast and up the estuaries of the rivers, and varies in depth from five to sixty miles. It has a very fertile, productive soil and will produce the same crop year after year with little fertilization and little decrease in yield. The large proportion of the exports which the agricultural products form—72 per cent of the total—indicates the chief adjustment that the people have made to the environmental conditions. The fertile front lands have been utilized by people as the chief means of support, and their development has been aided by their easily accessible position near the coast and on rivers which afford means of transportation. The rivers are numerous and are an important factor in the development of the country. The gold digger and balata collector are entirely dependent upon them as a means for transporting their products. These rivers, obstructed by bars and shoals at their mouths, and by rapids and falls in their upper courses, form a more or less defective means of communication considered as a whole. But in the agricultural region the four or five larger streams together with their tributaries form a network which makes it possible to travel from one to another entirely inland. Thus we find best developed that part of the region whose environmental conditions offer the least obstruction to its utilization by man.

The savannas or grasslands of the plateau region are suitable for cattle raising, yet that industry is at present undeveloped, largely on account of the inaccessibility of this district. The rivers, it is true, penetrate to the upland savannas but they are not navigable to that distance on account of the rapids which mark their descent from the plateaus to the lowlands. Even in the lowland savannas cattle-raising has developed only to a very limited extent, for means of communication are difficult to establish. Consequently the Colony must import much of its meat, butter, and other dairy products.

The forests are another resource to which the people have not reacted except in a rather feeble way. These districts are rich in various varieties of wood. The resources of the forests—

an area of about 80,000 square miles—are almost inexhaustible. But these resources have been developed only to a very small extent on account of the unhealthful climatic conditions, the impenetrable nature of the tropical forest, the inaccessibility of the region, the difficulty of building roads, and the relatively low value of the product in comparison with its bulk.

The development of the gold mining industry also has been slow on account of environmental conditions. Very lately diamond mining has come into prominence and it is now the most important mining industry. In 1923 the production during the first six months of the year amounted to 63,500 carats, and the Colony's export trade in the gems exceeded that of Brazil.

A survey of the several products that make up the agricultural exports shows that of these the most important is sugar. It forms 60 per cent of the total. The fertile, alluvial soil, the uniformly high temperature thruout the year, and the abundant rainfall of the coastal region are admirably suited to the production of sugar cane. The drainage of the land is the only drawback which the environment presents. To overcome this difficulty an effective drainage system has been necessary; each bed of cane must have its ditch, and each field its trench.

The predominance of sugar cane over all other agricultural products, however, is not altogether an adjustment to environmental conditions—other factors have entered into the situation. Cotton and coffee were once the staple industries of the Colony. The natural environment is very suitable for raising both of these crops, and possibly if certain non-geographic conditions had not affected the situation they would, at the present time hold a place at least equal in rank to that of sugar cane. The decline in the production of these crops began at the time of the emancipation of slaves in England and its colonies. At this time the problem of securing labor to man the plantations in British Guiana became serious. Gradually this difficulty was overcome by introducing coolie labor from India, but meanwhile the United States had become the great cotton producing region of the world. The Colony was unable to compete either in price or quality with the Southern States and had to turn to some other crop as its staple since cotton was no longer profitable. Something of a similar fate happened to the coffee industry when Brazil began to develop its great coffee producing areas. The Colony then gave its at-

tention to the raising of sugar cane for which, as has been said, the environmental conditions were excellently suited. Thus of the three great staples which British Guiana could produce almost equally well sugar became the chief, because it proved to be most profitable commercially.

The imports of British Guiana of which flour, manufactured textiles, tobacco, coal, hardware, implements and tools, oils, beef, and pork are the chief ones, indicate some of the limitations of the country. These limitations are almost entirely due to the natural environmental conditions. The soil and climate are unfit for the growing of wheat, corn, oats or tobacco, hence these commodities must be imported. Since there are no coal or iron deposits in the Colony, manufacturing is largely undeveloped, as is indicated by the large amount of manufactured goods of all kinds that are imported. A few rice mills, the sugar mills on the plantations, some cocoa factories, a few tanneries, and two or three boot and shoe factories make up the total of the manufacturing activities, and because agricultural adjustments are easily made and are commercially profitable, the difficulties which stand in the way of the development of manufacturing will probably never be overcome by the people of British Guiana.

Possibilities of Future Development of the Colony

The present development of British Guiana is the resultant of its natural environment plus the response of its people to these environmental conditions. This development I have tried to indicate. What its future will be is largely a matter of conjecture. There are many factors, however, in the situation that point to considerable growth: (1) Improved climatic conditions. The climate of the Colony has always been considered one of its chief drawbacks. At present the unhealthful climatic conditions have, to a large extent, been overcome by improved methods of sanitation and by a greater knowledge of the causes and hence a more effective treatment of the most typical and troublesome diseases. This fact will undoubtedly lead gradually to a greater white immigration and consequently to further development of the resources of the country, (2) Sugar production has great prospects because of the large area of good sugar cane land that is not under cultivation at present, (3) Rice production also may be expected to continue to increase since there is a considerable area suitable

for its growth that is not under cultivation and since the problem of securing sufficient labor has been considerably reduced by the recent successful introduction of machinery for its tillage, (4) The mineral resources of the Colony have not been fully exploited. They await the extension of railways into the interior, (5) Several of what are now minor agricultural activities such as lime growing, utilization of the forests and coconut palm cultivation give promise of a material increase in the future.

In conclusion, the future of British Guiana depends upon how successfully its people are able to make further profitable and effective adjustments to a natural environment which presents some obstacles but which also offers many opportunities. At present the possibilities of the country are limited by want of capital, uncertainty of labor supply and the lack of means of communication.

COLUMBIA SENDS AN S. O. S.

RUBY A. HENRY
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The following geographical sketch was worked up by the Geography II class as their contribution to a departmental "stunt program" sponsored by the membership committee of the Parent-Teachers' Association in our school. As schools are often called upon to get up programs for presenting various educational or community needs, we are passing this one on just as it was given. The general idea can be adapted to fit local conditions anywhere. This was the final number on the program, and the conclusion, with its touch of burlesque and suspense, certainly put the idea across the footlights.

The performance took between five and six minutes. Back of that, however, were nearly two weeks of study and preparation undertaken with a fine spirit of cooperation and carried on with interest that increased steadily. We pooled our ideas and our resources before deciding on the general plan here developed as the one that offered the best chance for an effective stunt. Columbia, sending an "S. O. S." for delegates from its distant possessions, to aid the appeal for the school—such was the outline in the beginning. To give it form and substance was the next task. First,

a list of our possessions, their location, their distance from the United States. Next, their relationship to our country, when, why and how acquired, and how governed at present; then, their geography, climate, resources, development, commerce; and last, their people, races, customs, characterictics, manners, dress. Especially their dress! Our reference material was thoroly combed before we accepted any statement or illustration as our final choice. We were in despair about our South Sea islanders. They must wear something, on this occasion at least. Diligent search thru the old files of the *National Geographic Magazine* finally brought to light a picture of Uncle Sam's native Samoan army—knee skirt, loose blouse, bright scarf and headdress, and a wicked looking spear! With our Samoans provided for, the rest was comparatively easy.

Fitting the class members to the cast was the most exciting part of it all. One tall blond girl was still unbobbed—Columbia, of course. The only other member with long tresses was short and dark. She must be our South Seas maiden. Between these two extremes, the exigencies of costume and stage properties decided the personnel of the cast. Here the "all for one and one for all" spirit was gratifyingly in evidence. Those who had, shared with those who lacked scarfs, combs, shawls, big brother's white duck or flannel suit, mother's fur coat, or grandmother's lace mantilla. The girl who brought in a genuine Hawaiian grass costume generously insisted that a darker girl should wear it instead of herself because she suited the part better. Can one ask more than that of a high school girl?

The dialogue and stage business evolved as we planned costumes. The result is largely their idea of what should be said and done. Each one contributed, criticised, or commented. Altogether, I believe our project enthusiasts would approve of this bit of purposeful activity. As a final comment upon its educational value, I shall state that the grades for the monthly test which included this work averaged much higher than usual.

PRESENTATION

Enter Right. COLUMBIA and FLAGBEARER *(To "Hail Columbia").*

Enter Left. HIGH SCHOOL GIRL, *bearing Louisville Girls High School banner (To L.G.H.S. song).*

GIRL. Hail COLUMBIA! Protector of Youth! Have you come to help us—the pupils of Louisville Girls High School?

COLUMBIA. Oh! Louisville Girls High School, I have heard of your school and of its needs, and have called for delegates from every land that owes allegiance to this flag to come to your assistance.

FLAGBEARER. The delegates from Alaska have arrived.

ALASKA. *(Enter right, and salute the flag)* We have come from Alaska, your oldest possession. We have traveled many miles on dog sled and skis in answer to your call.

COLUMBIA. Welcome! Alaska. Broadcast this message from your station at Juneau to the land of the Midnight Sun *(Flagbearer presents a placard).*

FLAGBEARER. The delegates from Hawaii!

HAWAII. *(Enter, left, and salute the flag)* We have come from the Hawaiian Islands, the cross-roads of the Pacific, to offer our assistance.

COLUMBIA. Delegates from Hawaii, announce this message from Honolulu to all the ships that sail the Seven Seas *(Presents placard).*

FLAGBEARER. The delegates from Porto Rico!

PORTO RICO. *(Enter, right, and salute the flag)* In answer to your call, Columbia, we have come from Porto Rico, the land of flowers and sunshine.

COLUMBIA. Citizens from the Caribbean, we bid you announce this message from San Juan to Central America and the West Indies *(Presents placard).*

FLAGBEARER. The delegates from Panama Canal Zone!

PANAMA CANAL ZONE. *(Enter, left, and salute the flay)* Columbia, we have heard your appeal and have come from the Panama Canal Zone to help the Louisville Girls High School.

COLUMBIA. Loyal citizens from Panama, from the radio station at the Canal, we bid you send this message to the people of South America *(Presents placard).*

FLAGBEARER. The delegates from Samoa!

TUTUILA. *(Enter, right, and salute the flag)* Columbia, we have come from Tutuila, far beyond the Equator, in answer to your call.

COLUMBIA. Proclaim this message to Australia and the South Sea Islands from your station at Pago Pago *(Presents Placard).*

FLAGBEARER. The delegates from the Philippines!

PHILIPPINES. *(Enter, left, and salute the flag)* We too have crossed the Pacific Ocean, Columbia, to help the Louisville Girls High School.

COLUMBIA. Delegates from the Orient, we ask you to broadcast this message from Manila to the people of the Far East *(Presents placard).*

COLUMBIA. Now, my local citizens, I thank you for your prompt response to this call. Return to your homes and proclaim this message so that all people may know of this worthy cause.

GIRL of *L.G.H.S.* COLUMBIA, how can we thank you and these friends who have come so far to offer their help to the Louisville Girls High School? May I make one more request? Before the delegates depart, may they give this message to the friends assembled here?

COLUMBIA. FLAGBEARER, present these delegates to this audience.

FLAGBEARER. Attention! (COLUMBIA *and* FLAGBEARER *move to right,* GIRL of *L.G.H.S. to left).*

Right. Dress! *(All form in line)*
Forward March!
Halt!
Present arms!
One! Two! Three! Four! Five! Six!
(As FLAGBEARER *calls each number, the placards are reversed, showing the "message"*—1. JOIN 2. THE 3. P.T.A. 4. OF 5. L.G.H.S. 6. TONIGHT)
Right. Face!
March! (FLAGBEARER *and* COLUMBIA *lead, placards facing audience as all march off stage)*

COSTUME SUGGESTIONS

Alaska. Dressed in furs or heavy clothing, sprinkled with artificial snow. They can carry a dog whip, pair of skiis or snowshoes.

Hawaii. Brightly colored costume with garlands of flowers around neck and in the hair. Our costume was a genuine hula girl outfit consisting of grass skirt and yellow short-sleeved blouse, grass anklets, and bracelets, necklace and headband. She carried a ukelele.

Porto Rico. Represented by a modified Spanish costume. In this case black and red, with high comb and black lace mantilla draped over it, a large old-fashioned fan, high-heeled shoes and a red rose were effective details. A silk shawl draped over a short dress would be a suitable costume.

Panama Canal Zone. Just plain American young people in summer time clothing. The "boy" wore white duck and Panama hat and carried a tennis racket, the girl wore thin summer dress, a large hat, and carried a white parasol.

South Sea Islands (Tutuila in Samoan Group). The very real problem here was solved by the girl wearing a light-colored underslip, with waist, shoulders, and flowing hair draped in brightly colored artificial flowers. We found in an old magazine a picture and a

description which gave us an opportunity to dress a "boy" as a native soldier in Uncle Sam's Samoan army. "He" wore a short, dark pleated skirt, a full white sleeveless blouse, red sash knotted at left side, a turban-like headdress, and carried a short spear.

Philippines. The girl of this group was dressed in the modified western costume which Philippine women have adopted; thin white dress with full skirt, normal waist line, low neck, and full sleeves; bright sash and flowers in her hair gave a tropical touch. The "boy" wore a white suit with red sash.

The number that can take part in this performance is limited only by stage space and the available resources in costumes. In our cast we had only one "girl" each and no "boys" from Hawaii and Porto Rico. White costumes and large Panama hats in each case would be suitable. Just a suggestion is needed often times, and the imagination supplies the rest.

A STUDY OF SIBERIA

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While reading "With an Exile in Artic Siberia" by Valdimir M. Zenzinor[1] my thoughts turned to how I might make this narrative a basis for the work of Seven A pupils who had just completed the study of the continent of Asia as a whole and were ready to begin the study of the countries.

APPROACH

At the first meeting I told them that I had just read a very interesting story about a Russian who had been exiled in Siberia and which I had planned to read to them. Some of them knew that Russia sent exiles to Siberia, one pupil had read that the exiles were forced to work in the mines under guards. It was suggested that if they knew something about Siberia, they would appreciate the story more. A list of some of the things they were to look for was made and references suggested.

READING THE STORY

The next day pupils were supplied with desk maps to follow the route of this prisoner to his place of exile. When we began to

[1] *National Geographic Magazine*, December, 1924

read the story the question immediately arose "Why was he banished?" This brought out a discussion of the government of Russia in which a Jewish boy who came to America in 1920 told of some of the experiences of his family in their native land, of the Revolution and downfall of the Czar. They located Indigirka River and Yakutsk on a wall map, and found the location of Russkoe Ustye by using the latitude and longitude given in the story. These were located on their maps. Some child suggested that he must have been taken by Russian officers over the Trans-Siberian railroad, starting from Petrograd as that was the capital in 1912. The Trans-Siberian railroad was sketched on the desk maps and largest cities located and largest rivers named. One pupil volunteered to tell of a long bridge he had read about that spans the Ob River; the coaches used on the Siberian road were described; the distance from Petrograd to Irkutsk was estimated; the nature of the country thru which the road passes was brought out. What the inhabitants along the route might be doing at that time of the year and what the prisoner might have seen in Irkutsk was discussed. Some pictures of Siberia were very helpful in this work.

In tracing the route from Irkutsk northward it was decided that they must have passed near Lake Baikal. Some one had found this lake much deeper than the Great Lakes; some one had read about the Tungus; another told about the forests as to size compared with the United States, kinds of trees and animal life; a boy told of the recent gold rush to the Aldan Valley. The reason for the long day and long night was brought out, also, the vegetation and extent of the tundra region. The habits of the migrating birds was interesting to them. Some one mentioned that Nansen advocated the possibilities of an Artic route to Europe and that a small fleet of steamers were engaged in carrying bulky products out of the country northward before the World War. The route the exile would probably have taken to the United States, if he had been successful in escaping, was traced on the desk maps, and some of the difficulties of making the journey were mentioned.

Questions that Arose

Then the following questions were considered. What were some of the changes that had taken place in Siberia during the five years he was in exile? Why do the natural resources of Si-

beria remain undeveloped? Will there be any possibility of the products of our city being sent to Siberia?

MAPS AND PICTURES

The illustrations in the article (Copies of the magazine were brought to class after the second day.) were studied. During our study pupils had been collecting pictures of Siberia which they placed in their note books, also newspaper clippings. They drew a free hand map of Siberia getting a working knowledge of the various features of the country, after which lantern slides of Siberia were shown.

This study appealed to the interests of the pupils from start to finish and as the work progressed their interest grew keener. I believe any teacher is amply repaid when worthwhile work is presented in such a way that pupils are happy in their work.

GEOGRAPHICAL NOTES

A certain European visiting in the United States went from Chicago to Springfield, Illinois, one of the centers of horse production in this country. Horse production in this man's mind was associated with the horse ranch and horse markets of Montana where herds often number hundreds of more or less wild range horses. Since this scene was lacking in Illinois, and since the traveler did not investigate the matter, he went away convinced that the concentration of horse production in the Corn Belt is wrong as represented on a horse production map of the United States.

A similar experience befell a woman accustomed to the sheep ranch of the West. This woman had seen a sheep map of the United States with its concentration of sheep in southeastern Ohio. Unconsciously she mentally stamped sheep ranches over the same area on the map. Last summer she traveled thru this section of Ohio. But she saw no sheep ranches there! On investigating the matter she found that sheep production in Ohio is not comparable to sheep production in the Rocky Mountain states. All of this shows that the study of dot distribution maps needs to be accompanied with an interpretative study of the environmental complex of the region. Students should be trained to visualize the types of production in relation to their different environments. This can be accomplished by teachers thru travel and wide reading. Government publications furnish a great deal of such reading material. For instance, "Trade Information Bulletin, No. 301" entitled "International Trade in Wool" (U. S. Department of Commerce) differentiates between sheep raising on the range and sheep raising as an adjunct to general farming.

The danger of drawing conclusions from insufficient data is brought out in Hugh H. Bennett's article, "Some Geographic Aspects of Western Ecuador," appearing in the *Annals of the Association of American Geographers,* September, 1925. A portion of the area is described has a dry season—almost rainless—of at least six months duration. Ordinarily, one would expect in such a region a marked retardation in plant growth. On the contrary, a great variety of trees covered with dense green foliage, green pastures, cacao and banana plantations flourish. Mr. Bennett comes to the conclusion that this must be due to soils of high capacity for moisture retentiveness, combined possibly with some underground seepage.

Ponding some of the waters draining into Hudson Bay and diverting them into the Great Lakes is a plan proposed by a Canadian Engineer. The Hudson Bay drainage waters, now relatively useless, would thus function in raising the level of the Great Lakes and in helping compensate for the loss of water in Lake Michigan thru the Chicago Drainage Canal.

Another link in trans-Andean railway construction has been completed. When rails were laid between Atocha and La Quiaca, railway connections were established between La Paz and Buenos Aires. The rail connections between Mollendo on the Peruvian coast and the Argentine capital, not counting water connections on Lake Titicaca, approximate 2,000 miles. A map of this transportation line appears in the new Pan American booklet, "La Paz, The World's Highland Capital."

Differences in natural resources and differences in the planes of economic development of two regions are two bases for trade between regions. The effects of these differences are shown in China's trade in gasoline. China's total annual consumption of gasoline is equivalent to about eight hours supply in the United States. What a difference this lack of trade in gasoline must make on the cultural landscape of China! Highways, automobiles, gasoline filling stations are such a part of our life that we can scarcely realize that most of the world is still buying gasoline in tin cans sold over the counter of a general store. The teacher who can vitalize statistics will find much of interest in the various numbers of the "Trade Promotion Series" published by the United States Department of Commerce.

GEOGRAPHICAL PUBLICATIONS

M. E. Branom. **The Branom Practice Tests in Geography.** The Macmillan Company, New York. 1925.

This set of materials consists of one hundred seven lessons, forty-four of which deal with the United States and its dependencies. The other lessons in the series are devoted to North America, exclusive of the United States; South America; and the countries of Europe, Asia, and Africa. Each lesson consists of exercises ranging in number from three to eighty-eight. These lessons comprise various types of exercises such as, the word-, phrase-, and sentence-completion exercises; the multiple-choice, true-false, and affirmative-negative exercises; and the matching of words, sentences, paragraphs, and numbers.

The material is selected with care, is distributed according to the usual emphasis given to the various geographical regions, and is undoubtedly geographically sound. The construction of the exercises conforms to the technique of expert designers of objective tests. To use the practice tests according to the intention of the author necessitates providing a copy for each child. This makes the use of the material rather expensive and likely will prevent a wide adoption of it. The advantages, however, such as providing the child with standard material in accessible and easily used form and providing him with a permanent record of his progress, will in a large measure compensate for the expense.

The material illustrates another achievement in the development of objective tests, the achievement having been made in a subject in which tests have not been developed to as high a degree as they have in the more mechanical subjects, spelling, handwriting, and reading. Where adopted and used according to the directions of the author, the material will undoubtedly facilitate the teaching of geography.

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Spitsbergen Papers. Vol. 1. **Scientific Results of the First Oxford University Expedition to Spitsbergen** (1921). Oxford University Press, American Branch, N.Y. 1925. $10.00.

The results of this expedition were first published as separate papers in various scientific journals. Reprints of these articles have been collected and bound under one cover to form one volume. The original plan of the expedition was to study the bird life of the archipelago, especially from the ecological point of view. But this plan was enlarged to include other biological and geological studies, as well as work of an exporatory character. Another voume will be forthcoming that will incorporate the work done by later expeditions that were influenced to extend the work undertaken by the first expedition.